Workplace Alaska

Class Specification
Chemist IV

Created: 07/15/1997 by Rachel Wilson
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09/25/2008 - Workplace AK spec revision: Added Census Job Code and AKPAY Code fields; Replaced Category field with Class Outline Category; Updated EEO4, SOC, and Class Code fields; Removed DOT field.

Last Update: **EEO4:** B **SOC:** 19-2031 **Census:** 02

Last Update Comments:

Definition:
The Chemist class series includes positions performing work that requires full professional education and training in the field of chemistry. Work is analytical in nature, involving investigation and interpretation of composition, molecular structure and properties of substances, transformations which they undergo, and the effects of such substances and transformations. Positions conduct a variety of analyses and present authoritative findings and conclusions. Work is primarily performed in laboratories.

Chemists develop, standardize or carry out methods and procedures for the analysis of compounds or substances, most commonly for the purposes of (1) detection, identification and quantification, (2) compliance with law, accepted standards or other requirements, (3) criminal investigation or law enforcement.

As chemistry is a broad field encompassing numerous branches and specialties, so this class is designed to be broad. All professional chemists have in common training and experience equivalent to the college training required for a bachelor's degree in chemistry. They are required to have knowledge of the broad field of chemistry and a working knowledge of basic principles of mathematics and physics, and the ability to relate and apply these principles to their work. The Chemist series covers all positions involving, for example, analytical chemistry, organic chemistry, inorganic chemistry, biochemistry, geochemistry, criminalistics or forensic chemistry, or other specializations depending upon the particular functions and objectives of agencies where the positions are located - - - where these jobs require a professional chemist background.

While the job classes are broadly prescribed, individual positions frequently require specialization (examples above). Beyond the entry level, positions typically require professional training and/or experience in specific area(s) of chemistry, and employee selection will be made on this basis.

Any Chemist position may be required to lead the work of laboratory assistants (nonprofessional, and/or professional assistants at higher levels) or work performed by field personnel, e.g., sample collecting and shipment, routine on-site testing procedures or the like. Lead responsibilities may be assigned on an intermittent or permanent basis, and are limited to a small number of assistants at any time, unless otherwise specified in the following descriptions.

Distinguishing Characteristics:
Chemist IV is the "expert" level class; the highest level of nonsupervisory professional chemist.

Chemist IV may also serve as working leader of a chemical laboratory staff, where responsibility is assigned for directing or performing work at the Chemist III level. Some elements of this section may frequently be required for the lead responsibilities as well; or where the technical complexity is more limited, substantial variety of analytical methods, tests, procedures, and greater lead responsibilities are required (e.g., 3 or more chemists, or assistant to the supervisor of a large laboratory facility).

Examples of Duties:
Positions at this level are expected to provide authoritative findings for the most extensive, difficult and non-routine types of analyses; are frequently engaged in development and adaptation of analytical methods, instrumentation, procedures, standards and tests, and establish these as guidelines for work of the laboratory; are typically concerned with substances for which there are no acceptable standards or official methods; perform original research to develop methods or extend existing techniques into new fields not previously reported in professional literature; provide expert consultation and leadership in the assigned specialty area.

Knowledge, Skills and Abilities:

Superior knowledge, through intensive experience and study, of the composition, technology and properties of substances and practices of the industries concerned (for example, areas of air or water quality, food, drugs, toxicological, metallurgical or criminalistic analyses) in order to (1) evaluate the critical elements in any new set of circumstances, (2) judge the most effective analytical or testing approaches, and (3) determine the course of action in the laboratory.

Knowledge of organic, inorganic, biochemistry, geochemistry or criminalistics sufficient to select methodologies based on different principles of analysis and to use special techniques appropriate for different purposes.

Knowledge of and ability to apply standard methods, procedures and techniques commonly used in chemical analytical work in one or more of the following: air or water quality, food, drugs, toxicology, mineralogy, metallurgy, criminalistics.

Knowledge of related sciences and techniques sufficient to examine substances by non-chemical techniques such as microscopic examinations, physical measurements and mechanical tests.

Knowledge of basic theories, principles, facts and units of measurements in chemistry.

Working knowledge of basic principles of mathematics and physics, and the ability to relate these to laboratory assignments.

Understanding of theoretical and practical limitations of established analytical and testing techniques in the areas of experience.

Understanding of principles and applications of commonly used analytical instruments and ability to determine and adapt as necessary their applicability to specific problems.

Ability to apply a knowledge of chemical structure, reactions and properties in order to determine deviations from the norm.

Ability to use standard laboratory techniques, instruments and methods.

Minimum Qualifications:

Graduation from college with a major in chemistry.
AND
Four years of increasingly responsible professional laboratory experience as a chemist, biochemist, geochemist, criminalist, or closely related position with the State of Alaska or the equivalent elsewhere. Experience must have included independent responsibility for making quantitative and qualitative analyses with intensive specialization in a class of chemical compounds or products.

Substitution: Graduate study in any of the chemistry related areas indicated in this section may substitute for the required experience (on a year-for-year basis) up to a maximum of two years.

Required Job Qualifications:

(The special note is to be used to explain any additional information an applicant might need in order to understand or answer questions about the minimum qualifications.)

Special Note:

Minimum Qualification Questions:

Do you have a bachelor's degree from an accredited college with a major in chemistry?
AND
Do you have four years of increasingly responsible professional laboratory experience as a chemist, biochemist, geochemist, criminalist, or closely related position with the State of Alaska or the equivalent elsewhere? (Experience must have included independent responsibility for making quantitative and qualitative analysis with extensive specialization in a class of chemical compounds or products.)

Or Substitution:

Do you have a bachelor's degree from an accredited college with a major in chemistry?
AND
Do you have a combination of two years of graduate study from an accredited college (2 semester or 3 quarter hours equal one month of experience) in chemistry or closely related field, and/or increasingly responsible professional laboratory experience as a chemist, biochemist, geochemist, criminalist, or closely related position with the State of Alaska or the equivalent elsewhere? (Experience must have included independent responsibility for making quantitative and qualitative analysis with extensive specialization in a class of chemical compounds or products.)
AND
Do you have two years of increasingly responsible professional laboratory experience as a chemist, biochemist, geochemist, criminalist, or closely related position with the State of Alaska or the equivalent elsewhere? (Experience must have included independent responsibility for making quantitative and qualitative analysis with extensive specialization in a class of chemical compounds or products.)